# Analog Camera User’s Manual (G2)

**Version 1.0.0**

# Table of Contents


1 General Introduction ..... 1

1.1 Overview ..... 1

1.2 Features ..... 1

1.3 Functions ..... 1

1.4 Specifications ..... 2

1.4.1 Mini Dome/Enhanced Mini Dome/Vandal Proof Dome ..... 2
1.4.2 ICR Day/Night High Resolution Dome Camera ..... 3
1.4.3 ICR Day/Night Vandal Proof Dome Camera ..... 5
1.4.4 IR Waterproof Dome Camera and Day/Night High Resolution Dome Camera ..... 6
1.4.5 50M IR Waterproof Fixed Camera and 100M IR Waterproof Fixed Camera 8

2 Framework ..... 10

2.1 Dimensions ..... 10

2.1.1 Mini Dome Camera ..... 10
2.1.2 Enhanced Mini Dome Camera ..... 10
2.1.3 Dome Camera ..... 10
2.1.4 Day/Night Vandal Proof Dome Camera ..... 11
2.1.5 Day/Night High Resolution Dome Camera ..... 11
2.1.6 50M IR Waterproof Fixed Camera ..... 12
2.1.7 100M IR Waterproof Fixed Camera ..... 12

2.2 Structure ..... 13

2.2.1 Mini Dome ..... 13
2.2.2 Enhanced Mini Dome ..... 13
2.2.3 Dome Camera ..... 13
2.2.4 Day/Night Vandal Proof Dome Camera ..... 14
2.2.5 Day/Night High Resolution Dome Camera ..... 15
2.2.6 50M IR Waterproof Fixed Camera ..... 16
2.2.7 100M IR Waterproof Fixed Camera ..... 17

3 Installation ..... 18

3.1 Dome Camera ..... 18

3.1.1 Mini Dome Camera/Enhanced Mini Dome Camera and Dome Camera Installation ..... 18

3.1.2 Vandal Proof and Day/Night High Resolution Dome Camera Installation .21
3.2 Fixed Camera .....24
4 Menu.....26
4.1 Main Menu.....26
4.2 Main Interface .....27
4.3 Detailed Operation .....27
4.3.1 LENS .....27
4.3.2 SHUTTER GAIN.....28
4.3.3 WHITE BALANCE (WB).....28
4.3.4 HLC/BLC.....29
4.3.5 PICTURE ADJUST .....29
4.3.6 DIGITAL WDR/ATR/ATR-EX.....30
4.3.7 MOTION DETECT .....30
4.3.8 PRIVACY MASK.....30
4.3.9 DAY/NIGHT.....31
4.3.10 NR (NOISE REDUCE/DE-NOISE) .....31
4.3.11 CAMERA ID .....32
4.3.12 SYNC MODE .....32
4.3.13 LANGUAGE .....32
4.3.14 CAMERA RESET .....33
4.3.15 OTHERS.....33
4.4 Menu Keys Operation.....33
Appendix Toxic or Hazardous Materials or Elements .....34

# Welcome

Thank you for purchasing our analog camera!
This user’s manual is designed to be a reference tool for your system.
Please read the following safeguard and warnings carefully before you use this series product!
Please keep this user’s manual well for future reference!

# Important Safeguards and Warnings

## 1．Electrical safety

All installation and operation here should conform to your local electrical safety codes.
The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated 12V DC (24V AC) in the IEC60950-1.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

## 2．Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

## 3．Installation

Do not apply power to the camera before completing installation.
Please install the proper power cut-off device during the installation connection.
Always follow the instruction guide the manufacturer recommended.
If this product is installed in the ceiling, please make sure the installation position can sustain the min 50N.

## 4．Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.
We are not liable for any problems caused by unauthorized modifications or attempted repair.

## 5．Environment

This series camera should be installed in a cool, dry place away from direct sunlight or strong light, inflammable, explosive substances and etc.
The working temperature ranges from -30℃ ~ to +60℃. Please keep it away from the electromagnetic radiation object and environment.
Please keep the sound ventilation.
Do not allow the water and other liquid falling into the camera.

## 6. Accessories

Be sure to use all the accessories recommended by manufacturer.
Before installation, please open the package and check all the components are included.
Contact your local retailer ASAP if something is broken in your package.

## 7. Daily Maintenance

Please shut down the device and then unplug the power cable before you begin daily maintenance work.

Use the dry soft cloth to clean the device.
If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.
Please put the dustproof cap to protect the CCD (CMOS) component when you do not use the camera.

# 1 General Introduction

## 1.1 Overview

This series analog camera adopts the high sensitivity CCD and advanced circuit design. It is featuring the high quality video, the lowest distortion, low noise and etc. This series product is suitable to be used in surveillance system and video process system.

## 1.2 Features

- High-performance SONY CCD, high resolution, vivid and impressive video
- Support auto day/night mode switch to realize the monitor both in the daytime and at night.
- Support backlight compensation function (BLC)
- Support auto white balance function. Restore high definition and more reliable video
- High signal to noise ratio (SNR), clear and impressive video,
- The auto electronic shutter is suitable for various surveillance environments.
- Support auto electronic gain control, self-adaptive brightness.
- Auto exposure function
- Support IR function (For IR series product only)
- Advanced X-Y-Z axis structure, support the 355 degrees rotation.(For dome camera series product only)

## 1.3 Functions

**Day/night mode (Color and black/white switch)**

This function allows the camera to display the color video in the daytime while the black and white video at the night. It is to enhance camera sensitivity and definition.

**ICR**

The IR cut removal is to filter the IR light in the daytime and then auto switch to the general fitter at night. This function allows the camera to output the high sensitivity and clear video.

**Auto gain function**

To output the standard video signal in the different illumination environments, the amplifier needs to adjust in a wide range. The system can enhance the camera sensitivity in low illumination and enhance the video signal output to get the clear and high definition video.

**SNR**

It is the ratio value between the signal voltage and the noise voltage. The higher the SNR value, the lower the adverse effect. It is to guarantee the clear video.

**Auto White Balance**

The white balance refers to the camera to restore the white object color. It allows the camera to automatically adjust the color temperature in indoor and outdoor environment, just like our human eyes does.

**Auto exposure**

System can automatically set shutter speed and iris value according to the snapshot video exposure condition.

**Auto electronic shutter**

The system can automatically adjust the electronic shutter when the environment light changes.

**Waterproof**

This series construction shell waterproof level reaches the considerable requirement. It can be installed in the outdoor environment without other protection component.

**IR night vision (for the IR series product only)**

In the night vision condition, this series product can use the IR light to allow you to see the object or realize the monitor in the low illumination environment.

## 1.4 Specifications

### 1.4.1 Mini Dome/Enhanced Mini Dome/Vandal Proof Dome

Please refer to the following sheet for specification.

| Model / Parameter | Mini Dome Camera | Enhanced Mini Dome | Vandal Proof Dome Camera |
|---|---|---|---|
| | CA-D480P/N | CA-D480CP/N | CA-DB480BP/N(-A) |
| **Video Processor** | 1/3" SONY EXview HAD CCD Ⅱ | | |
| **Video Format** | PAL/NTSC | | |
| **Effective Pixel** | PAL:<br>976(H)*582（V）<br>NTSC:<br>976(H)×494（V） | | |
| **Resolution** | 700TVL | | |
| **Min Illumination** | Color:0.05Lux/F1.2 | Color: 0.05lux/F1.2 | Color: 0.05lux/F1.4 |
| **Electronic Shutter** | PAL<br>Auto: 1/50s~1/100,000s<br>Manual: 1/50s,1/120s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s | | |
| | NTSC<br>Auto: 1/60s~1/100,000s<br>Manual: 1/60s,1/100s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s | | |
| **Lens Type** | Default model is 3.6mm. (2.8mm/6mm/8mm is optional) | Default model is 3.6mm. (2.8mm/6mm/8mm/12mm is optional) | Default model is φ14 port 4.0-9.0 zoom auto aperture lens (2.8～12mm，5～15mm，8～20mm is optional) |

| | | | | |
|---|---|---|---|---|
| **Day/Night Switch** | | Auto | | |
| **Synchronization Mode** | | INT | | |
| **Video Output** | | 1Vp-p Composite Output (75 Ohm/BNC) | | |
| **SNR** | | Above 60 dB(AGC OFF) | | |
| **OSD Menu Control** | | Support | | |
| **OSD** | **LENS** | Manual/DC | | |
| | **SHUTTER/AGC** | Auto/Manual | | |
| | **BACKLIGHT (BLC)** | Off/BLC/HLC(High light compensation ) | | |
| | **WHITE BALANCE** | ATW/ ANTI CR /manual/push lock/push/user 1/user 2 | | |
| | **DAY/NIGHT MODE** | Auto/external trigger/black and white/color | | |
| | **PICTURE ADJUST** | Mirror/brightness/contrast/sharpness/hue/gain | | |
| | **ATR** | Off/luminance/contrast | | |
| | **MOTION DETECT** | Detect sensitivity/block display/area selection | | |
| | **PRIVACY MASK** | Area selection/color/transparent/mosaic | | |
| | **NR** | Level/Y level/C level | | |
| | **Camera ID** | Character/position | | |
| | **Language** | English/Japanese and etc | | |
| **Working Temperature** | | -30℃~60℃ | | |
| **Power** | | DC12V±10%<br>(-A) series product support AC24V±10% ／DC12V±10%. | | |
| **Power Consumption** | | 3W MAX | | |
| **Dimension(mm)** | | φ105×86.3 | Φ108.2×86.3 | Φ160×118.5 |
| **Weight** | | 300g | 300g | 980g(-A:1000g) |

### 1.4.2 ICR Day/Night High Resolution Dome Camera

| **Model / Parameter** | **ICR Day/Night High Resolution Dome Camera** |
|---|---|
| | **CA-D481BP/N(-A)** |
| **Video Processor** | 1/3" SONY EXview HAD CCD Ⅱ |
| **Video Format** | PAL/NTSC |

| | | |
|---|---|---|
| **Effective Pixel** | | PAL:<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） |
| **Resolution** | | 700TVL |
| **Min Illumination** | | Color: 0.05lux/F1.4<br>Black and white: 0.005lux/F1.4 |
| **Electronic Shutter** | | PAL<br>Auto: 1/50s~1/100,000s<br>Manual: 1/50s,1/120s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| | | NTSC<br>Auto: 1/60s~1/100,000s<br>Manual: 1/60s,1/100s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| **Lens Type** | | Default model is φ14 port 4.0-9.0 zoom auto aperture lens (2.8～12mm) |
| **Synchronization Mode** | | INT |
| **Video Output** | | 1Vp-p Composite Output (75 Ohm/BNC) |
| **SNR** | | Above 60 dB(AGC OFF) |
| **OSD Menu Control** | | Support |
| **OSD Control** | **LENS** | Manual/DC |
| | **SHUTTER/AGC** | Auto/Manual |
| | **BACKLIGHT (BLC)** | Off/BLC/HLC(High light compensation ) |
| | **WHITE BALANCE** | ATW/ ANTI CR /manual/push lock/push/user 1/user 2 |
| | **DAY/NIGHT MODE** | Auto/black and white/color |
| | **PICTURE ADJUST** | Mirror/brightness/contrast/sharpness/hue/gain |
| | **DIGITAL WDR** | Off/luminance/contrast |
| | **MOTION DETECT** | Detect sensitivity/block display/area selection |
| | **PRIVACY MASK** | Area selection/color/transparent/mosaic |
| | **NR** | Level/Y level/C level |
| | **Camera ID** | Character/position |
| | **Language** | English/Japanese and etc |

| | |
|---|---|
| **Working Temperature** | -30℃~60℃ |
| **Power** | DC12V±10%；<br>（-A） series product support AC24V±10% ／DC12V±10% |
| **Power Consumption** | 3W MAX |
| **Dimension(mm)** | φ140.8×120 |
| **Weight** | 400g(-A:450g) |

### 1.4.3 ICR Day/Night Vandal Proof Dome Camera

| **Model / Parameter** | | **ICR Day/Night Vandal Proof Dome Camera** |
|---|---|---|
| | | **CA-DB481BP/N(-A)** |
| **Video Processor** | | 1/3" SONY EXview HAD CCD Ⅱ |
| **Video Format** | | PAL/NTSC |
| **Effective Pixel** | | PAL:<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） |
| **Resolution** | | 700TVL |
| **Min Illumination** | | Color: 0.05lux/F1.4<br>Black and white: 0.005lux/F1.4 |
| **Electronic Shutter** | | PAL<br>Auto: 1/50s~1/100,000s<br>Manual: 1/50s,1/120s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| | | NTSC<br>Auto: 1/60s~1/100,000s<br>Manual: 1/60s,1/100s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| **Lens Type** | | Default model is φ14 port 4.0-9.0 zoom auto aperture lens (2.8～12mm) |
| **Synchronization Mode** | | INT |
| **Video Output** | | 1Vp-p Composite Output (75 Ohm/BNC) |
| **SNR** | | Above 60 dB(AGC OFF) |
| **OSD Menu Control** | | Support |
| **OSD Control** | **LENS** | Manual/DC |
| | **SHUTTER/AGC** | Auto/Manual |
| | **BACKLIGHT (BLC)** | Off/BLC/HLC(High light compensation ) |
| | **WHITE BALANCE** | ATW/ ANTI CR /manual/push lock/push/user 1/user 2 |

| | | |
|---|---|---|
| | **DAY/NIGHT MODE** | Auto/external trigger/black and white/color |
| | **PICTURE ADJUST** | Mirror/brightness/contrast/sharpness/hue/gain |
| | **DIGITAL WDR** | Off/luminance/contrast |
| | **MOTION DETECT** | Detect sensitivity/block display/area selection |
| | **PRIVACY MASK** | Area selection/color/transparent/mosaic |
| | **NR** | Level/Y level/C level |
| | **Camera ID** | Character/position |
| | **Language** | English/Japanese and etc |
| **Working Temperature** | | -30℃~60℃ |
| **Power** | | DC12V±10%；<br>（-A） series product support AC24V±10% ／DC12V±10% |
| **Power Consumption** | | 3W MAX |
| **Dimension(mm)** | | φ160×118.5 |
| **Weight** | | 980g(-A:1000g) |

### 1.4.4 IR Waterproof Dome Camera and Day/Night High Resolution Dome Camera

| **Model / Parameter** | **IR Waterproof Dome Camera** | **Day/Night High Resolution Dome Camera** |
|---|---|---|
| | **CA-DW480CP/N** | **CA-D480BP/N(-A)** |
| **Video Processor** | 1/3" SONY EXview HAD CCD Ⅱ | |
| **Video Format** | PAL/NTSC | |
| **Effective Pixel** | PAL:<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） | PAL:<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） |
| **Resolution** | 700TVL | |
| **Min Illumination** | Color: 0.02Lux/F1.2 (0 Lux IR light is on) | Color: 0.05lux/F1.4 |
| **Electronic Shutter** | 1/50(1/60)s~1/100,000s | PAL<br>Auto: 1/50s~1/100,000s<br>Manual:<br>1/50s,1/120s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| | | NTSC<br>Auto: 1/60s~1/100,000s |

| | | | |
|---|---|---|---|
| | | | Manual:<br>1/60s,1/100s,1/250s,1/500,1/1000s,1/2000s,<br>1/4000s,1/10,000s |
| **Lens Type** | | IR0 default model is 3.6mm.(2.8mm/6mm is optional)<br>IR1 default model is 6mm. (3.6mm/8mm is optional)<br>IR2 default model is 12mm. (3.6mm/6mm/8mm is optional)<br>IR3: default model is 16mm(3.6mm/6mm/8mm/12mm is optional） | Default model is φ14 port 4.0-9.0 zoom auto aperture lens (2.8～12mm，5～15mm，8～20mm is optional) |
| **Day/Night Switch** | | Auto | |
| **Synchronization Mode** | | INT | |
| **Video Output** | | 1Vp-p Composite Output (75 Ohm/BNC) | |
| **SNR** | | Above 60 dB(AGC OFF) | |
| **White Balance** | | Auto | |
| **Gain Control** | | Auto | |
| **BLC** | | Auto | |
| **Protection Level** | | IP66 | N/A |
| **IR Distance** | | IR0: 5-10m；IR1: 10-20m；<br>IR2: 20-30m；IR3：30-50m | N/A |
| **OSD Menu Control** | | N/A | Support |
| **OSD Control** | **LENS** | N/A | DC |
| | **SHUTTER/AGC** | N/A | Auto/Manual |
| | **BACKLIGHT (BLC)** | N/A | Off/BLC/HLC(High light compensation ) |
| | **WHITE BALANCE** | N/A | ATW/ ANTI CR /manual/push lock/push/user 1/user 2 |
| | **DAY/NIGHT MODE** | N/A | Auto/external trigger/black and white/color |
| | **PICTURE ADJUST** | N/A | Mirror/brightness/contrast/sharpness/hue/gain |
| | **ATR** | N/A | Off/luminance/contrast |
| | **MOTION DETECT** | N/A | Detect sensitivity/block display/area selection |
| | **PRIVACY MASK** | N/A | Area selection/color/transparent/mosaic |

| | | | |
|---|---|---|---|
| | **NR** | N/A | Level/Y level/C level |
| | **Camera ID** | N/A | Character/position |
| | **Language** | N/A | English/Japanese and etc |
| **Working Temperature** | | -30℃~60℃ | |
| **Power** | | DC12V±10% | DC12V±10%；<br>（-A） series product support AC24V±10%<br>／DC12V±10% |
| **Power Consumption** | | 7W MAX | 3W MAX |
| **Dimension(mm)** | | φ135×104.5 | φ140.8×120 |
| **Weight** | | 600g | 400g(-A:450g) |

### 1.4.5 50M IR Waterproof Fixed Camera and 100M IR Waterproof Fixed Camera

| Model / Parameter | 50M IR Waterproof Fixed Camera | 100M IR Waterproof Fixed Camera |
|---|---|---|
| | **CA-FW480CP/N** | **CA-FW480BP/N** |
| **Video Processor** | 1/3" SONY EXview HAD CCD Ⅱ | |
| **Video Format** | PAL/NTSC | |
| **Effective Pixel** | PAL：<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） | PAL:<br>976（H）×582（V）<br>NTSC:<br>976（H）×494（V） |
| **Resolution** | 700TVL | |
| **Min Illumination** | Color: 0.02Lux/F1.2 (0Lux IR light is on) | |
| **Electronic Shutter** | 1/50(1/60)s~1/100,000s | |
| **Lens Type** | IR0 default model is 3.6mm.(2.8mm/6mm is optional)<br>IR1 default model is 6mm. (3.6mm/8mm is optional)<br>IR2 default model is 12mm. (3.6mm/6mm /8mm is optional)<br>IR3: default model is 16mm(3.6mm/6mm 8mm/12mm is optional） | IRA default model is 25mm. (12mm/16mm is optional) |
| **Day/Night Switch** | Auto | |
| **Synchronization Mode** | INT | |
| **Video Output** | 1Vp-p Composite Output (75 Ohm/BNC) | |
| **SNR** | Above 60 dB(AGC OFF) | |
| **White Balance** | Auto | |

| | | |
|---|---|---|
| **Gain Control** | Auto | |
| **BLC** | Auto | |
| **IR Distance** | IR0: 5-10m；IR1: 10-20m；<br>IR2: 20-30m；IR3：30-50m | IRA:100-110m |
| **Protection Level** | IP66 | |
| **Working Temperature** | -30℃~60℃ | |
| **Power** | DC12V±10% | AC24V±10% |
| **Power Consumption** | 7W Max | 20W Max |
| **Dimension(mm)** | 200.2×89×76 | 288.3×118.3×101 |
| **Weight** | 1000g | 2500g |

# 2 Framework

## 2.1 Dimensions

Please note all the units in the following figures are mm.

### 2.1.1 Mini Dome Camera

Please refer to the following two figures for the dimension information. See Figure 2-1.

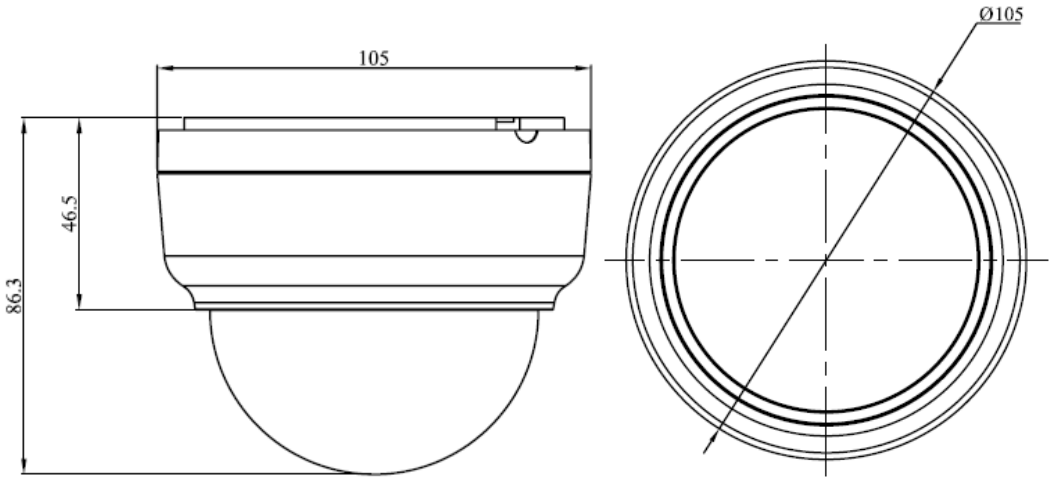


Figure 2-1

### 2.1.2 Enhanced Mini Dome Camera

Please refer to the following figure for detailed information. See Figure 2-2.

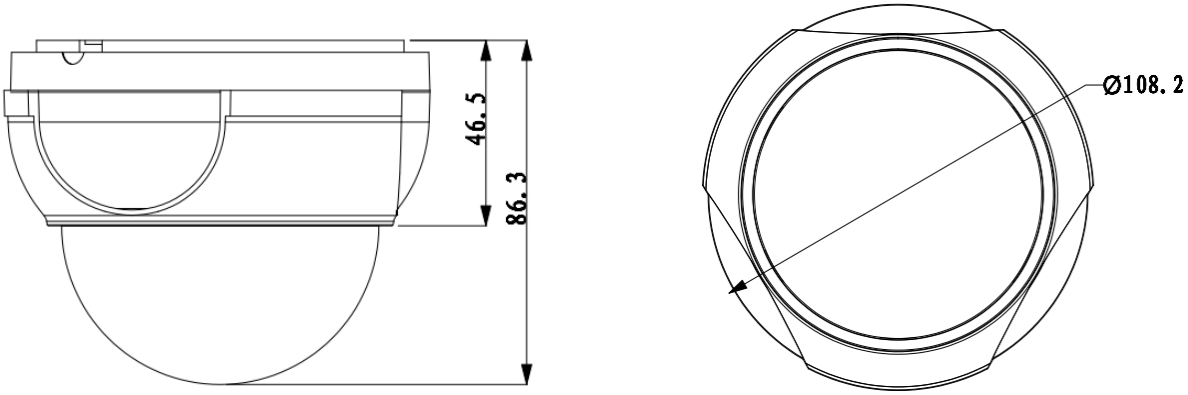


Figure 2-2

### 2.1.3 Dome Camera

Please refer to the following figure for detailed information. See Figure 2-3.

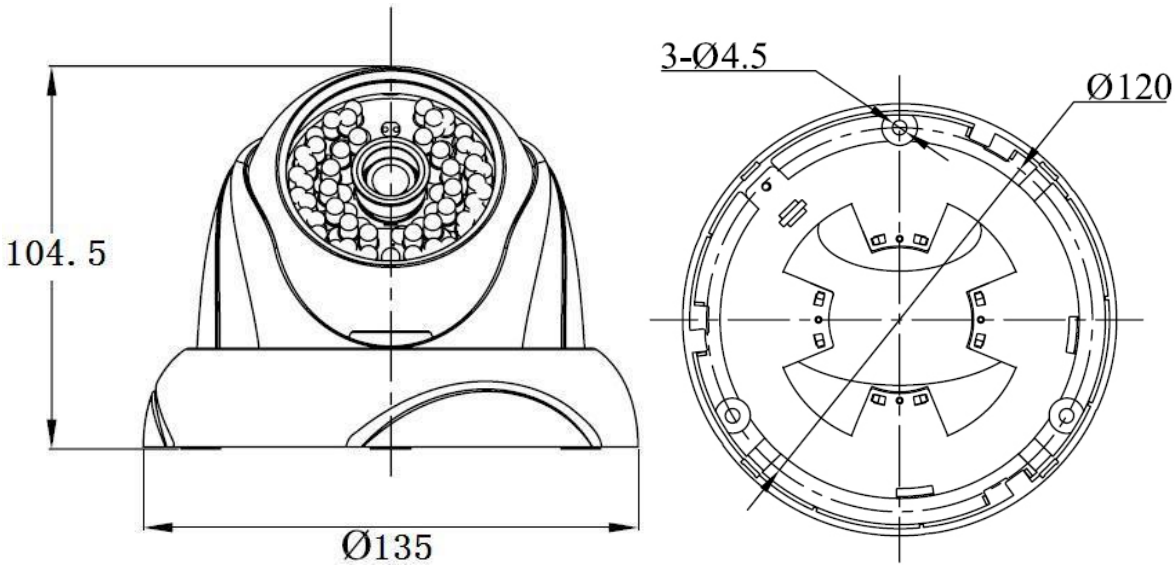


Figure 2-3

### 2.1.4 Day/Night Vandal Proof Dome Camera

Please refer to the following figure for detailed information. See Figure 2-4.

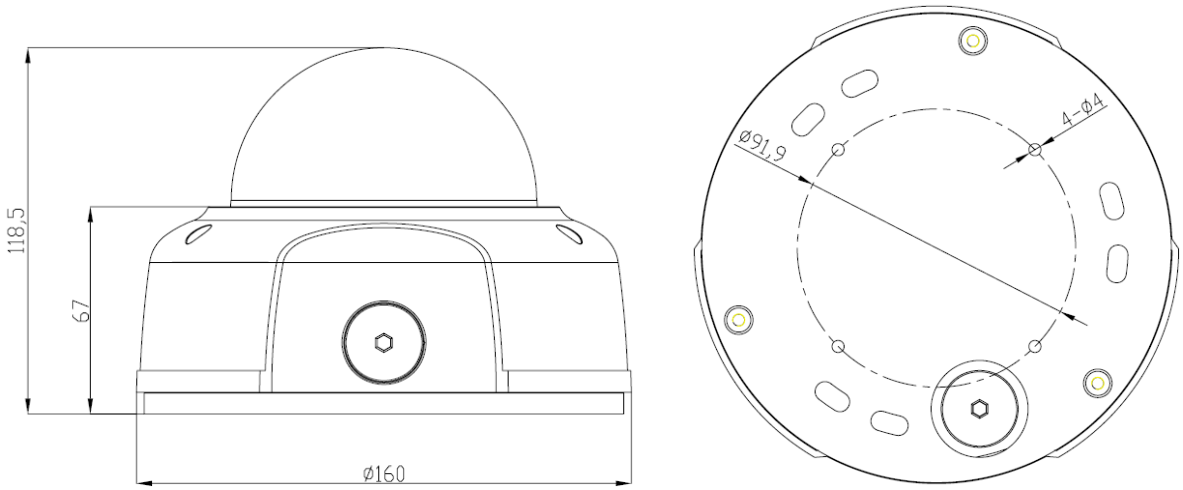


Figure 2-4

### 2.1.5 Day/Night High Resolution Dome Camera

Please refer to the following figures for detailed information. See Figure 2-5.

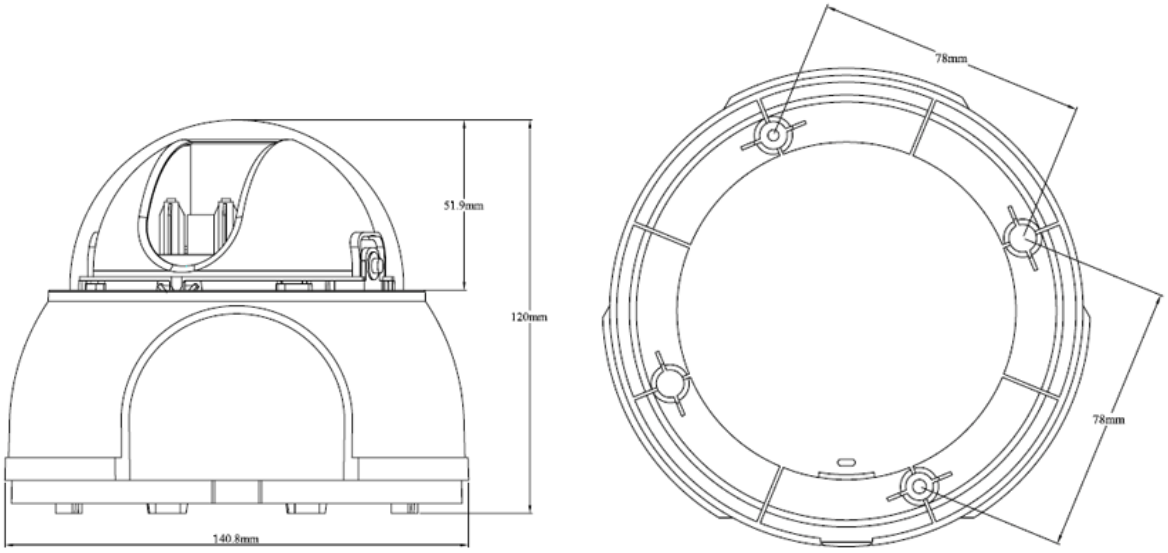


Figure 2-5

### 2.1.6 50M IR Waterproof Fixed Camera

Please refer to the following figure for detailed information. See Figure 2-6.

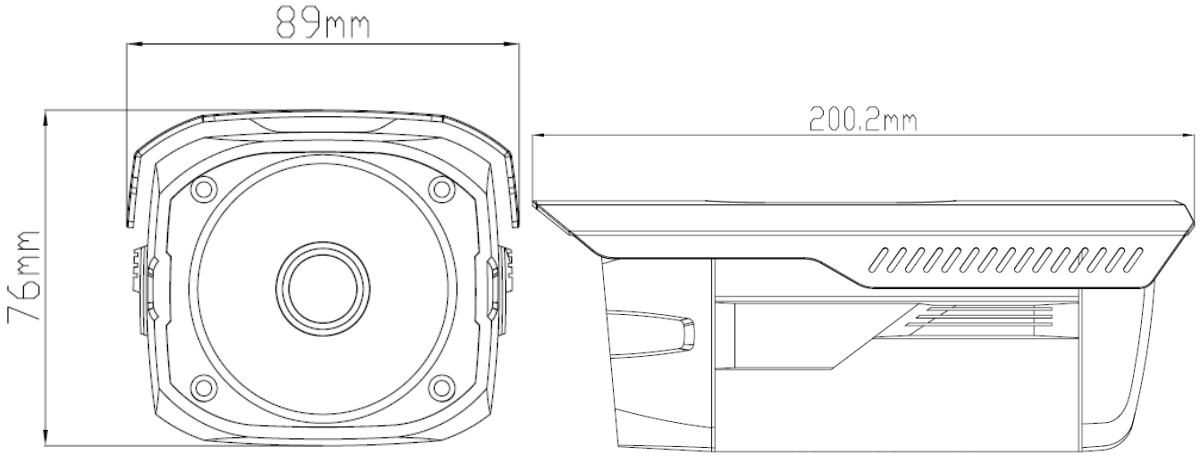


Figure 2-6

### 2.1.7 100M IR Waterproof Fixed Camera

Please refer to the following figure for detailed information. See Figure 2-7.

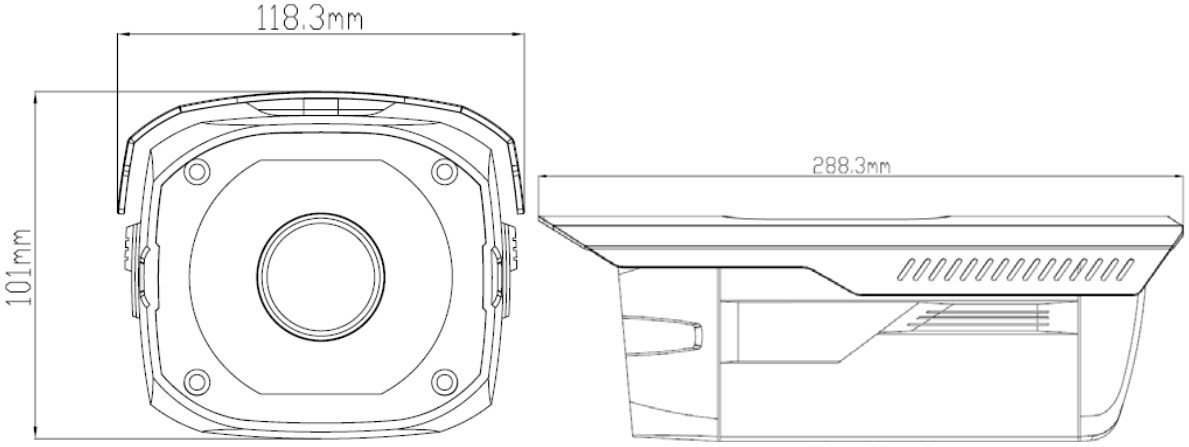


Figure 2-7

## 2.2 Structure

### 2.2.1 Mini Dome

Please refer to the following figure for detailed information. See Figure 2-8.

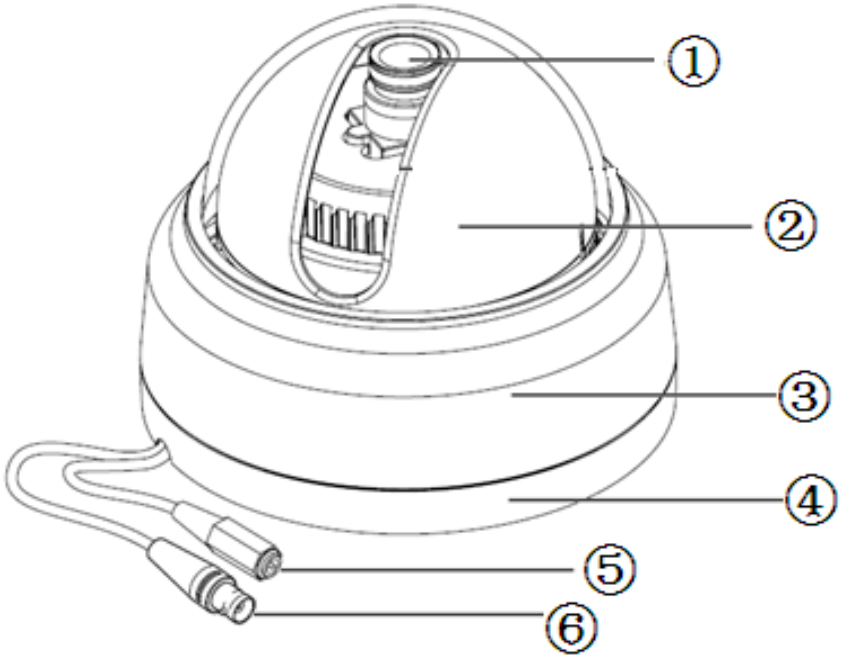


Figure 2-8

### 2.2.2 Enhanced Mini Dome

Please refer to the following figure for detailed information. See Figure 2-9.

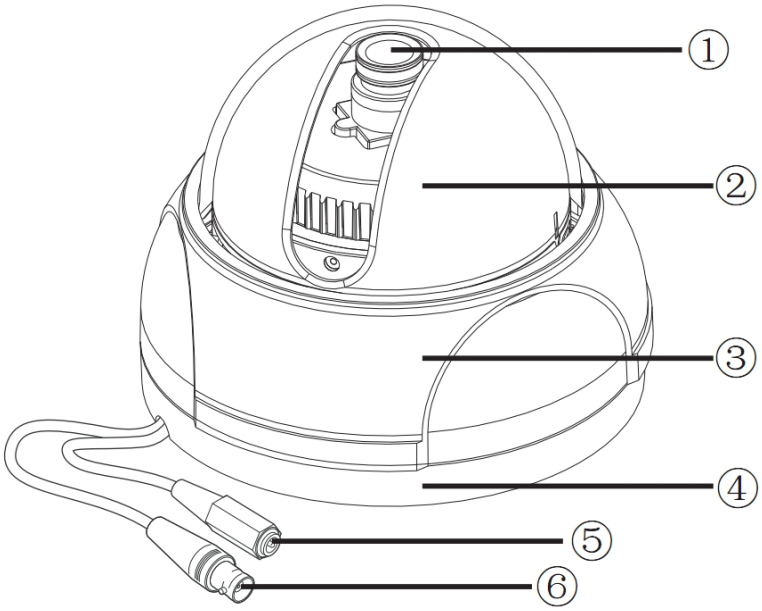


Figure 2-9

### 2.2.3 Dome Camera

Please refer to the following figure for detailed information. See Figure 2-10.

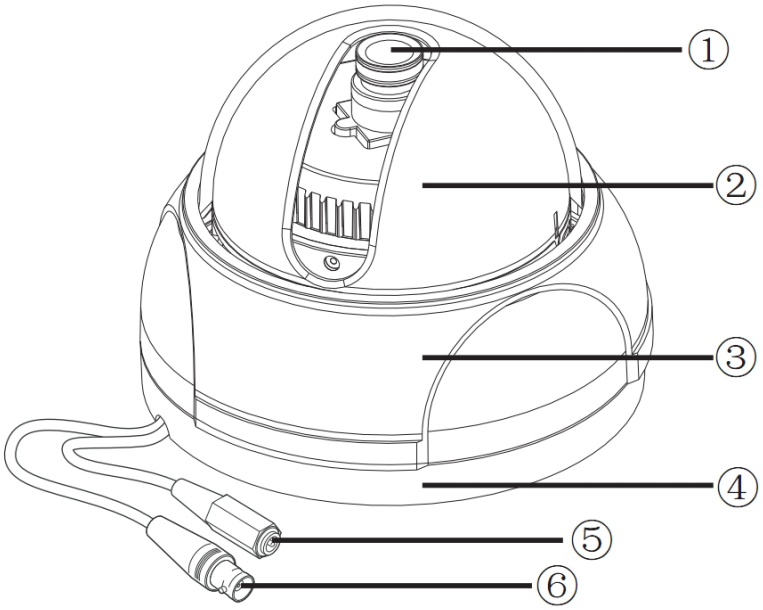


Figure 2-10

| SN | Name | |
|---|---|---|
| 1 | Device lens | N/A |
| 2 | Dome camera enclosure | N/A |
| 3 | Dome camera side enclosure | N/A |
| 4 | Dome camera pedestal | For the dome camera (Figure 2-10), please turn the device upside down to see the pedestal. |
| 5 | Power input port | Connect to the DC 12V power to input the power. |
| 6 | Video output port | BNC port is to output analog video signal.<br>You can connect to the devices such as the DVR or the NVR |
| 7 | Photosensitive component | It is to control the IR light on/off status according to the environment illumination. |
| 8 | IR light | It is to send out the IR compensation light to enhance the night vision. |

**Important**

For the dome camera, there are two cable exits, one is at the bottom and one is at the side.

Please use the rubber dustproof plug to secure the idle exit.

The power cable and the video output cable both pull through the cable exit.

### 2.2.4 Day/Night Vandal Proof Dome Camera

Please refer to the following figure for detailed information. See Figure 2-11.

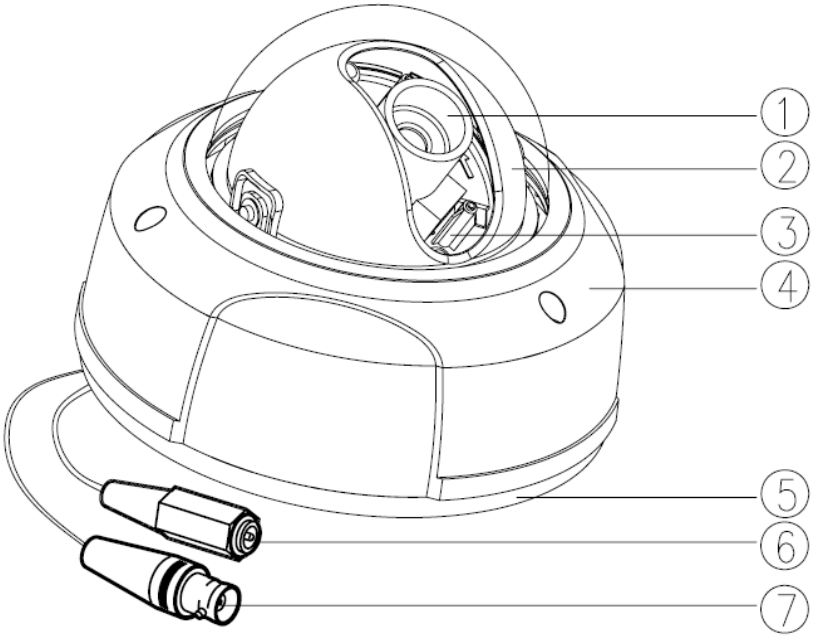


Figure 2-11

### 2.2.5 Day/Night High Resolution Dome Camera

Please refer to the following figure for detailed information. See Figure 2-12.

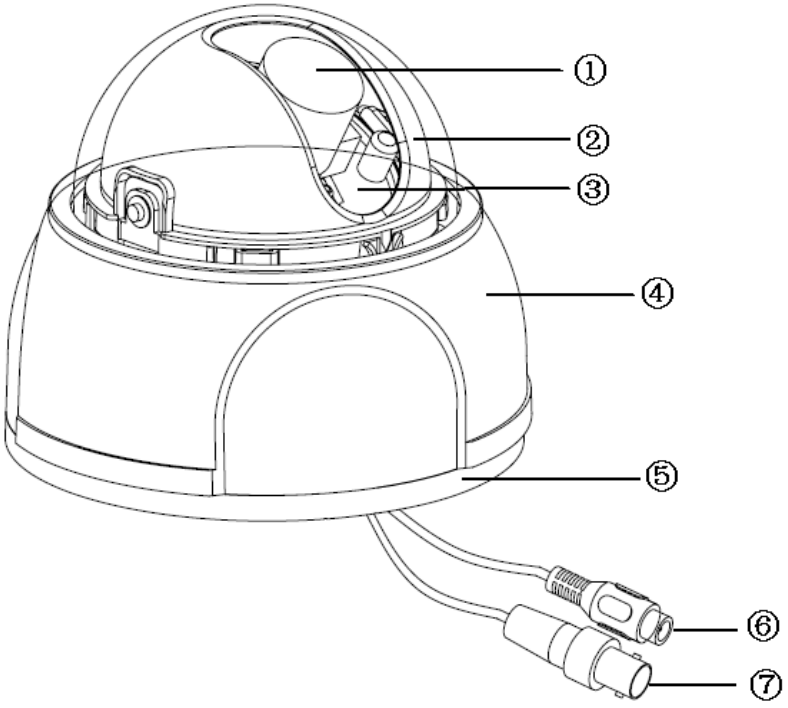


Figure 2-12

Please refer to the following sheet for detailed information.

| SN | Name | |
|---|---|---|
| 1 | Device lens | |
| 2 | Dome camera inside enclosure | |
| 3 | X-Y-Z rotation module | |
| 4 | Dome camera enclosure | |
| 5 | Installation pedestal | |
| 6 | Power input port | Connect to the DC 12+ power to input the power. |
| 7 | Power output port | BNC port. It is to output analog video signal.<br>You can connect to the devices such as the DVR or the NVR |

### 2.2.6 50M IR Waterproof Fixed Camera

Please refer to the following figures for detailed information. See Figure 2-13 and Figure 2-14.

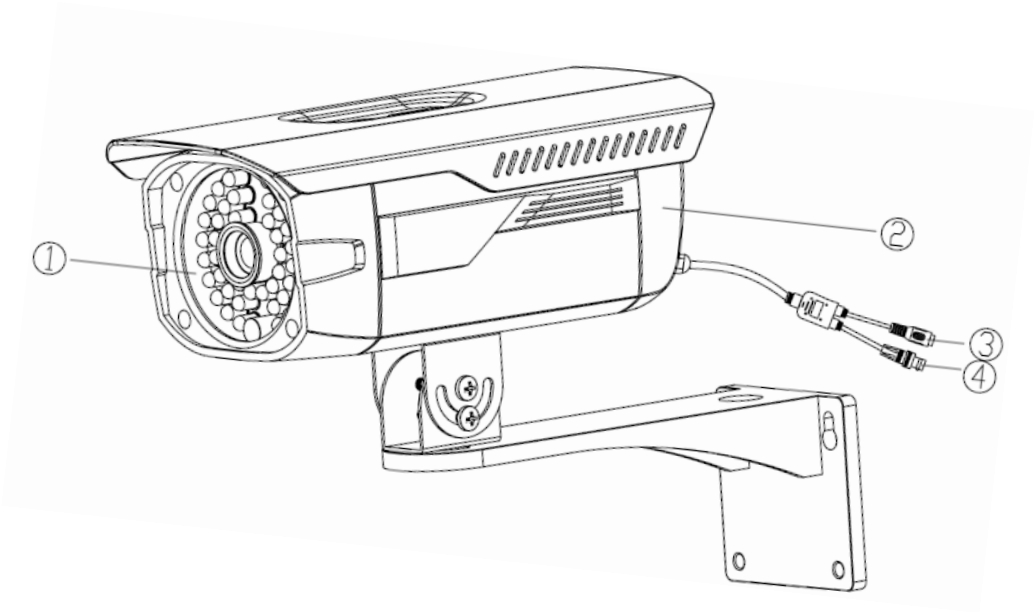


Figure 2-13

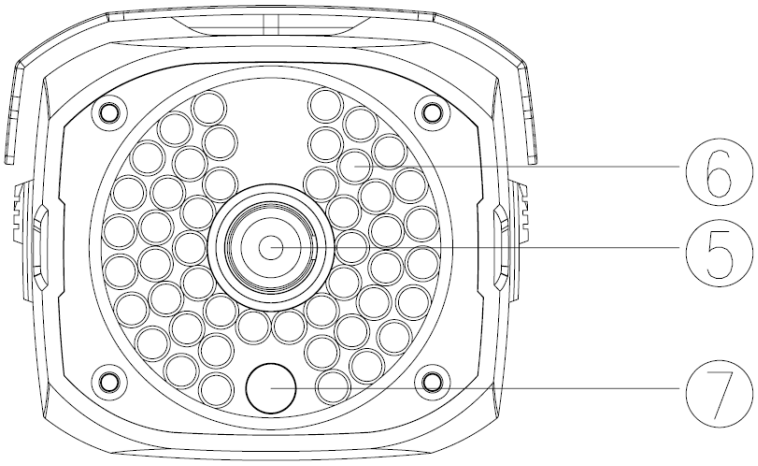


Figure 2-14

### 2.2.7 100M IR Waterproof Fixed Camera

Please refer to the following figure for detailed information. See Figure 2-15 and Figure 2-16.

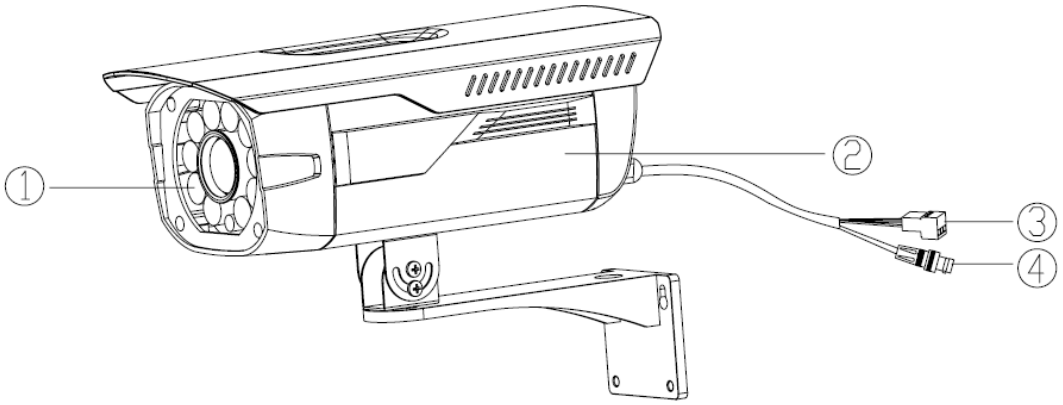


Figure 2-15

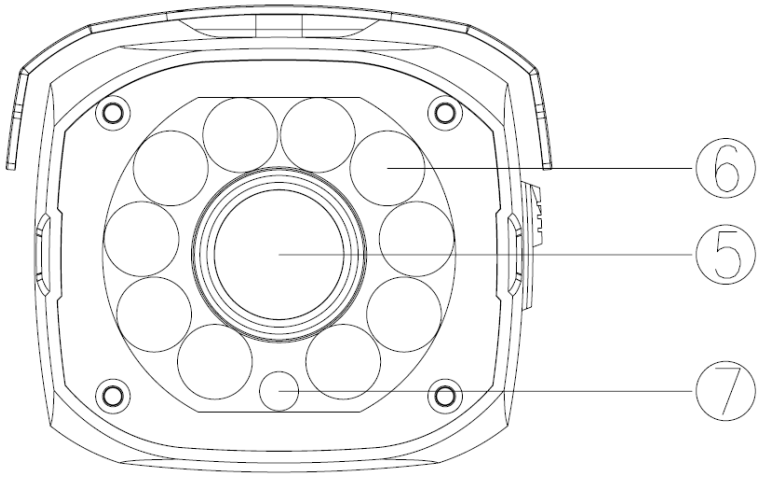


Figure 2-16

Please refer to the following sheet for detailed information.

| SN | Port Name | Function |
|---|---|---|
| 1 | Front cover | The internal structure includes the ⑤Lens, ⑥IR light, and ⑦Photosensitive resistance in Figure 2-14 or Figure 2-16. |
| 2 | Enclosure | N/A |
| 3 | Power input port | Connect to the DC +12V to input power.<br>**For the 100M IR waterproof fixed camera, please connect to the 24V AC power.** |
| 4 | Video output port | BNC port to output analog video signal.<br>You can connect to the devices such as the DVR or the NVR. |
| 5 | Photosensitive component | It is to enable/disable the IR light according to the environment light illumination. |

# 3 Installation

## 3.1 Dome Camera

The dome camera usually mainly uses the in-ceiling installation. Here we take the IR vandal proof dome camera as an example. For other series dome camera, please refer to the similar installation steps too.

**Important**

**Please make sure the installation surface can min support the 3X weight of the camera and the bracket.**

### 3.1.1 Mini Dome Camera/Enhanced Mini Dome Camera and Dome Camera Installation

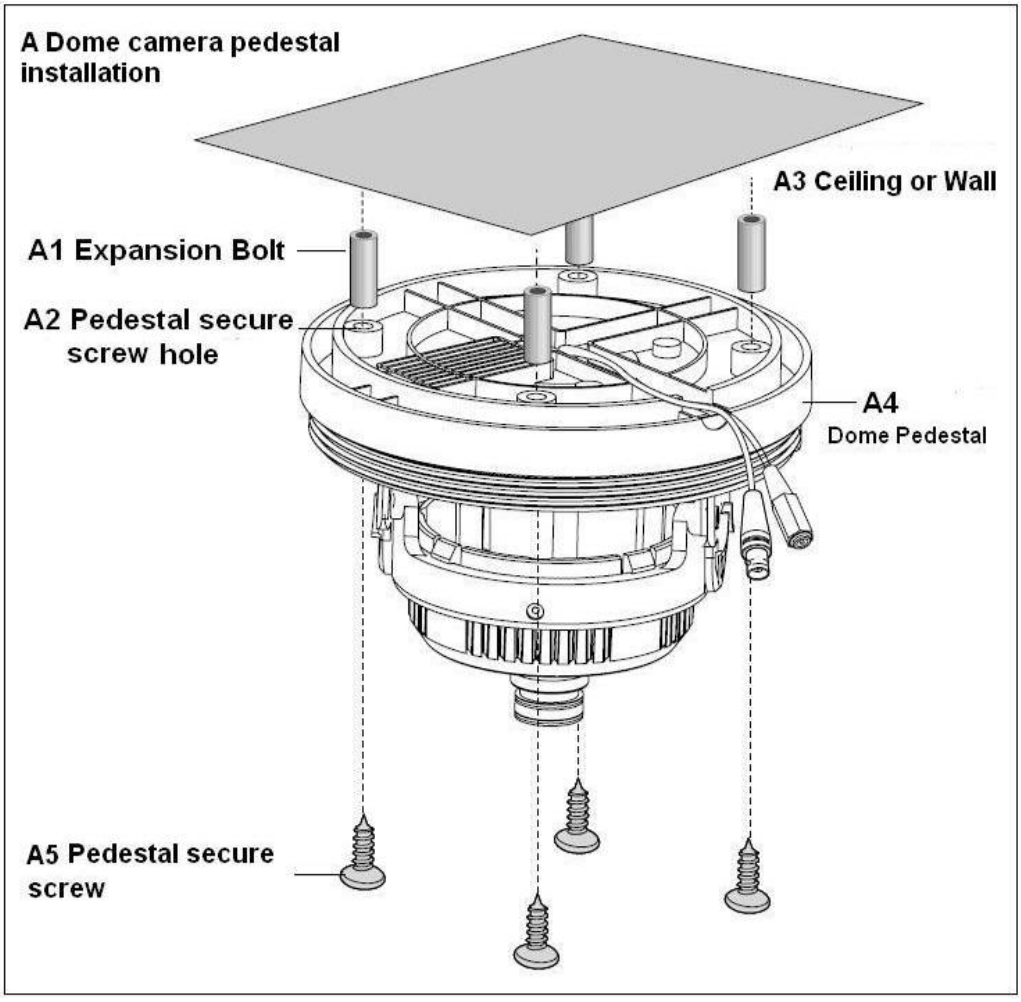


Figure 3-1

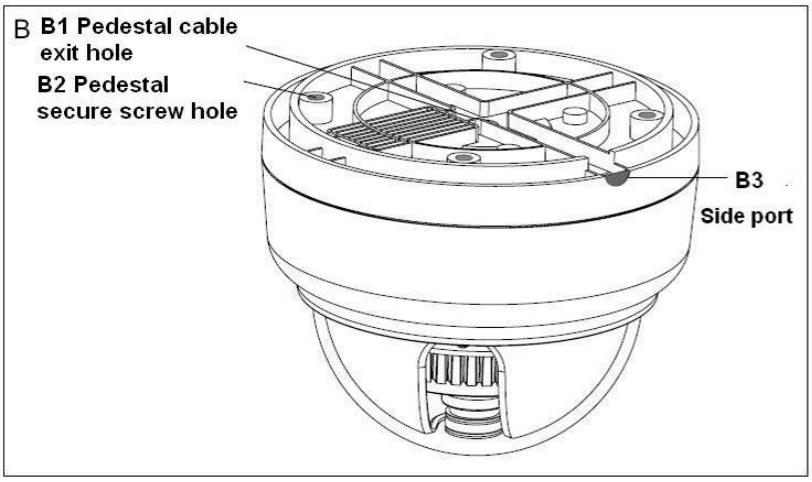


Figure 3-2

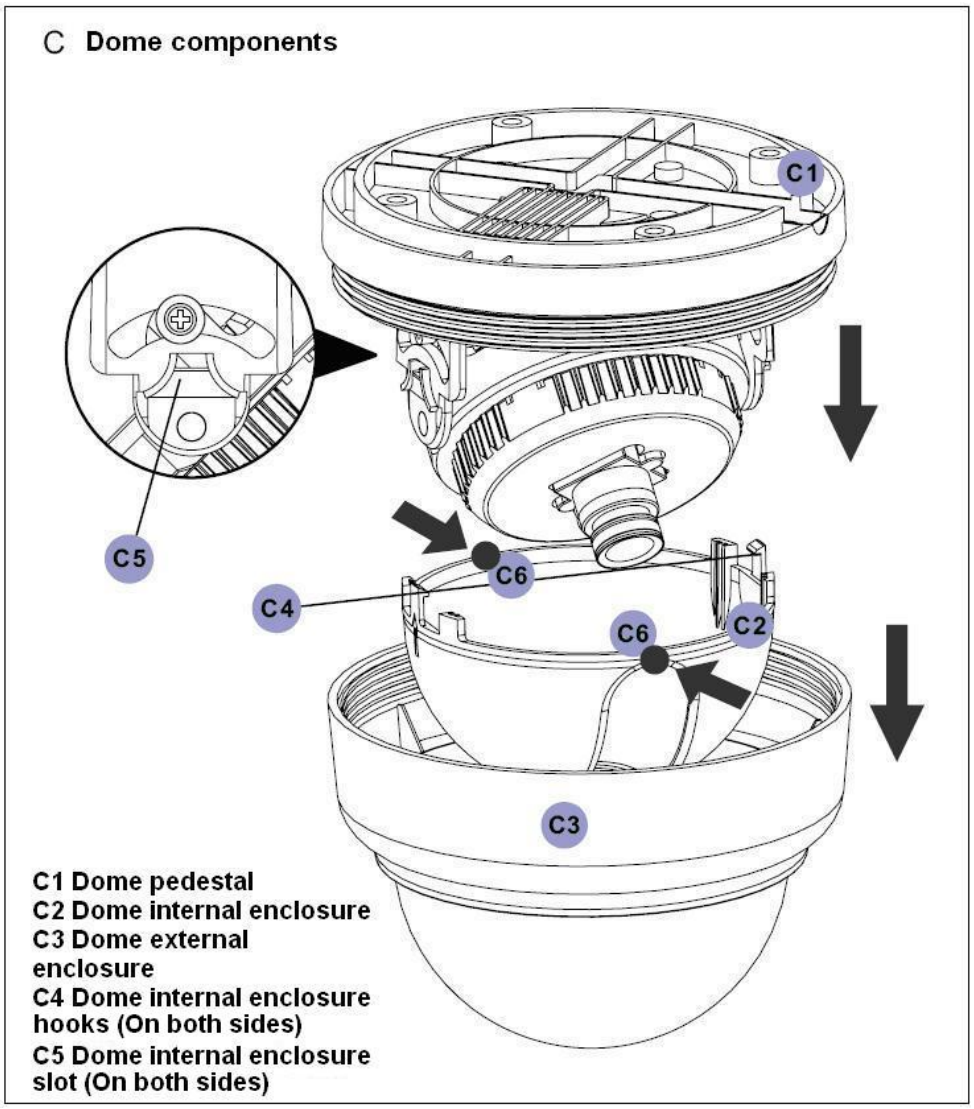


Figure 3-3

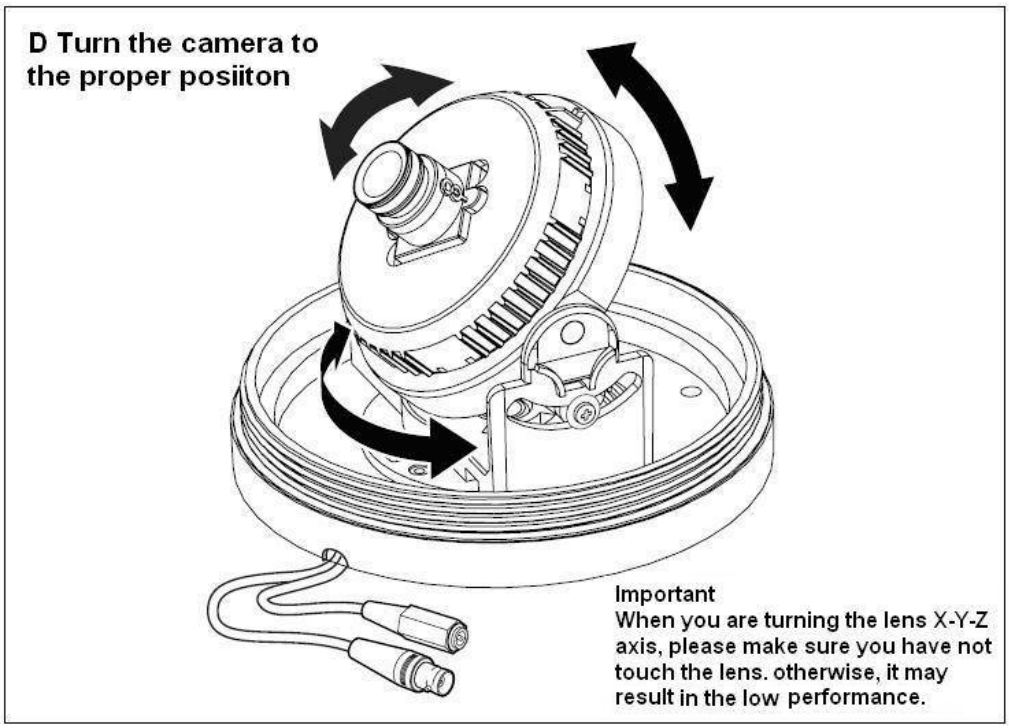
D Turn the camera to the proper posiiton
Important
When you are turning the lens X-Y-Z axis, please make sure you have not touch the lens. otherwise, it may result in the low performance.

Figure 3-4

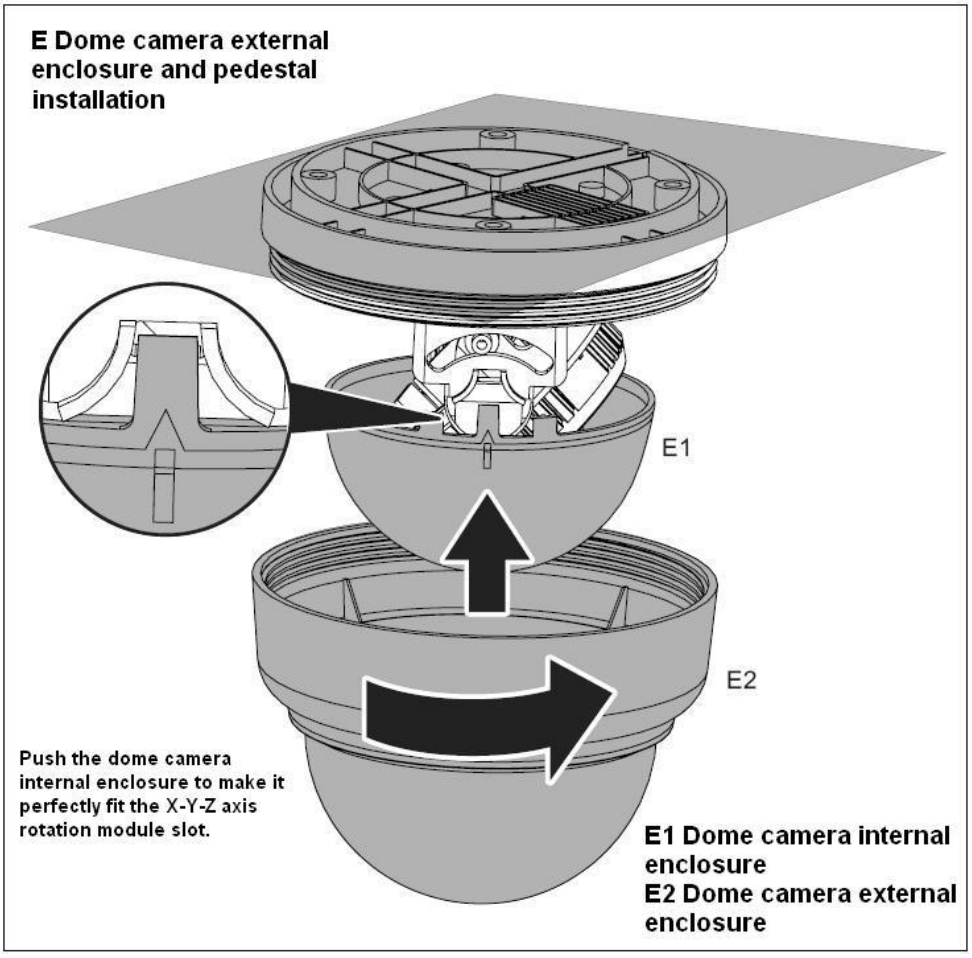
E Dome camera external enclosure and pedestal installation
E1
E2
Push the dome camera internal enclosure to make it perfectly fit the X-Y-Z axis rotation module slot.
E1 Dome camera internal enclosure
E2 Dome camera external enclosure

Figure 3-5

**Step1**

Please take the installation position map in the accessories bag, and then paste it on the ceiling or the wall you want to install the dome camera. Dig four holes in the installation surface and then insert four expansion bolts in the hole. Secure these four bolts firmly.

**Step 2**

Turn the dome camera external enclosure counter clockwise and the remove. Push the two sides of the dome camera internal enclosure (Please refer to C6 in Figure 3-3) so that the hook drops from the X-Y-Z axis module. Remove the dome camera internal enclosure. Please refer to Figure 3-3.

**Step 3**

Use the proper tool to open the cable exit side hole in the pedestal (Please refer to B2 in Figure 3-2), and then draw the cable from the cable exit (Please refer to B2 in Figure 3-2) and fix the cable in the pedestal cable channel. Draw the cable port out of the cable channel side hole of the pedestal (Please refer to the B2 in Figure 3-2 ).

**Step 4**

Line up the four screw holes in the pedestal to the holes you just dug in the ceiling (wall), then input the four secure screws in the pedestal screw secure holes. Fix the screws firmly to secure the dome camera in the ceiling (wall).

**Step 5**

Turn the lens or the ring to adjust the camera to the proper direction. Adjust the X-Y-Z axis to turn the camera lens to the proper monitor angle. Please refer to the Figure 3-4.

**Step 6**

Push the hooks (Please refer to C4 in Figure 3-3) of two sides of the internal enclosure to the slot (Please refer to C5 in Figure 3-3) of the X-Y-Z axis to make the internal enclosure perfectly fit the X-Y-Z axis. After the installation, please make sure the lens port of the internal enclosure is fit the camera lens. Please refer to Figure 3-5 for proper adjustment if necessary.

**Step 7**

Turn dome camera enclosure clockwise to fasten it on the pedestal.

**Step 8**

Connect the device video output port to the terminal devices such as the DVR, NVS and etc. Then connect the power cable to the device.

Now you have completed the dome camera installation and cable connection.
You can use the terminal devices such as the DVR, NVS and etc to view the monitor video.

### 3.1.2 Vandal Proof and Day/Night High Resolution Dome Camera Installation

Please note the following figures are based on the vandal proof dome camera.

**Step 1**

Use the inner hexagonal wrench (provided) to loose the three inner hexagon screws in the dome cover and then open the cover. See Figure 3-6.

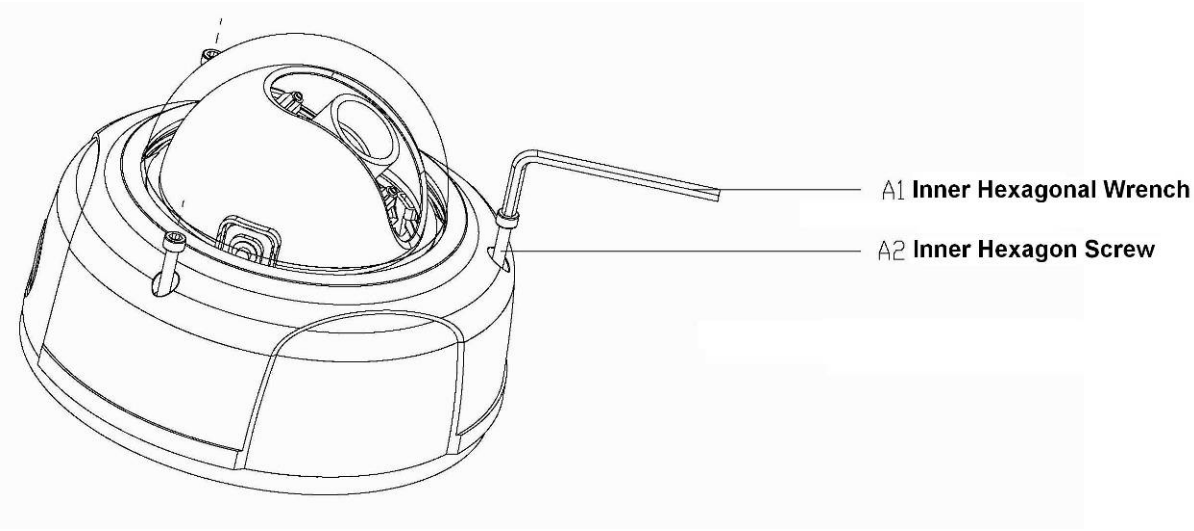


Figure 3-6

**Step 2**

Use the inner hexagonal wrench (provided) to loose the three inner hexagon screws in the dome and then remove the device installation pedestal. See Figure 3-7.

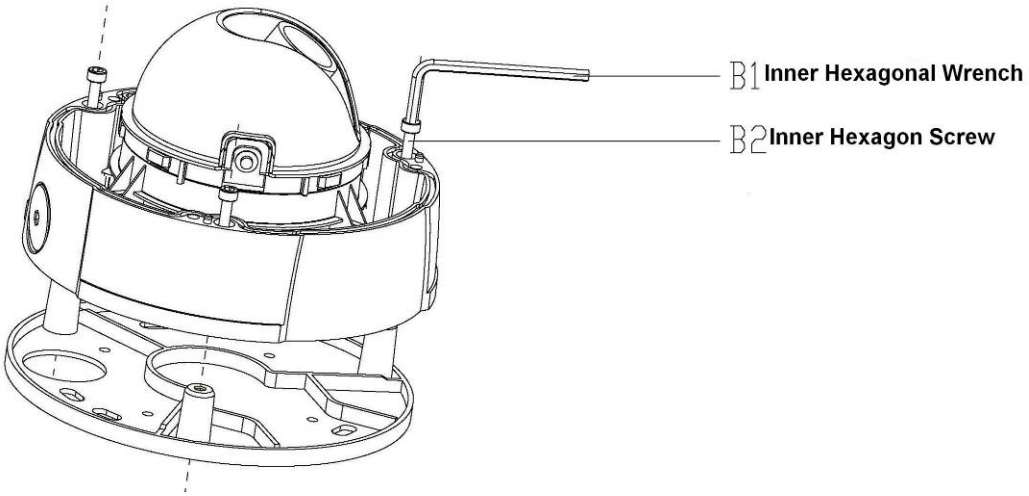


Figure 3-7

**Step 3**

Take out the installation positioning map from the accessories bag and then paste it on the ceiling or the wall to identify the installation area. Draw out the cable exit and four plastic expansion bolt holes in the installation position according to the device pedestal. Dig the four plastic expansion bolt holes and cable exit. Insert the four plastic expansion bolts into the screw holes

**Step 4**

Adjust the device installation pedestal to the proper position and then draw the cable through the cable exit you just dug in the ceiling (wall). Line up the four screw holes in the device pedestal to the four plastic expansion bolt holes in the installation position. Put the four self-tapping screws in the four plastic expansion bolts firmly.

**Step 5**

Adjust the device position and then line up the three inner hexagon screws of the device to the three holes in the installation ceiling (wall). Put the three inner hexagon screws to the screw holes of the device pedestal and then use the inner hexagonal wrench to secure firmly.

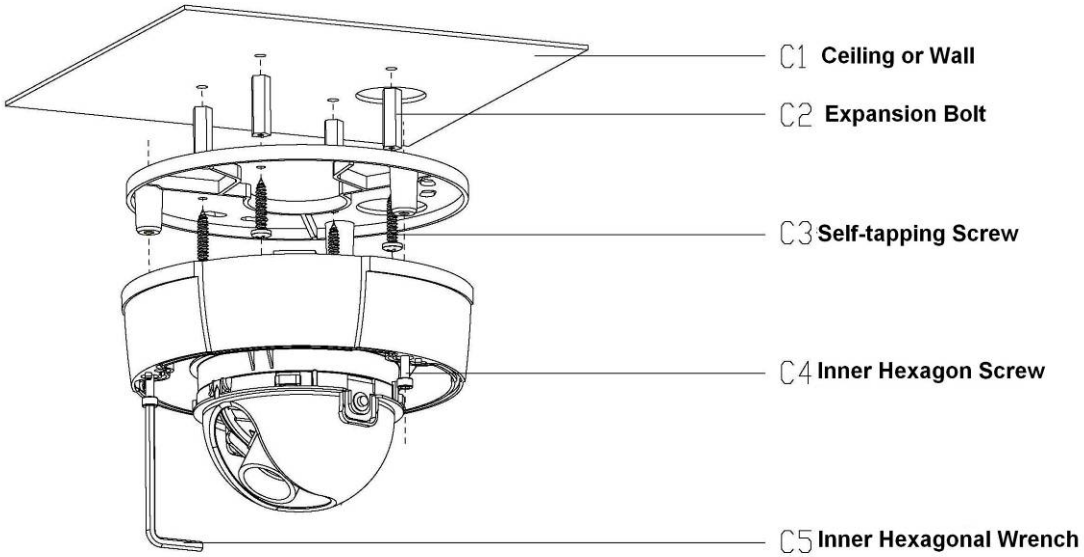


Figure 3-8

**Step 6**

Push the two sides of the inside enclosure of the dome to remove the tab (D2). Loose the fixed screws (D4) and then turn the X-Y-Z rotation module (D3) to adjust the camera lens to the proper monitor angle. See Figure 3-9.

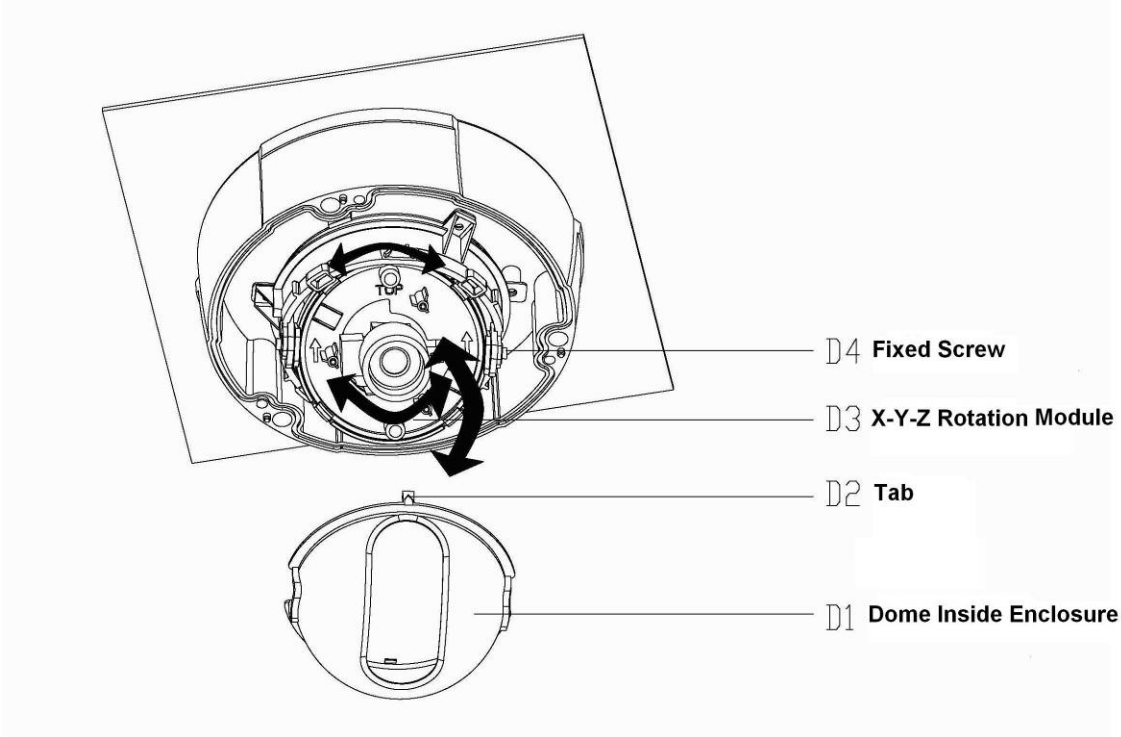


Figure 3-9

**Step 7**

Put the done inside enclosure back and then put the dome cover back. Line up the three inner hexagon screws to the holes of the device. Use the inner hexagonal wrench to secure the screws to complete the installation. See Figure 3-10.

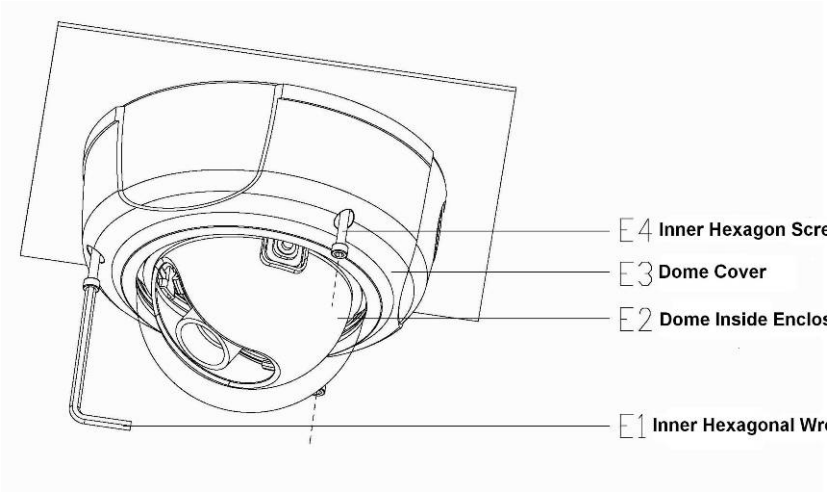


Figure 3-10

## 3.2 Fixed Camera

Here we take the 50M IR water proof fixed camera as an example. For other series fixed camera, please refer to the similar installation steps too.

**Important**

**Please make sure the installation surface can min support the 3X weight of the camera and the bracket.**

Please refer to the steps listed below for installation information.

**Step 1**

Line up the two installation holes at the bottom of the device shell to the two installation holes of the pendant bracket (in the front). Insert the screws and then secure firmly. Now you have fastened the device in the bracket.

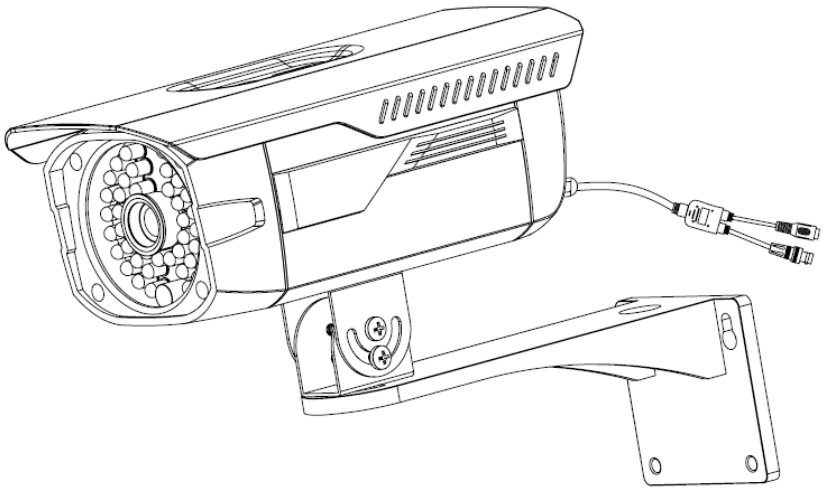

Figure 3-11

**Step 2**

Dig four holes in the wall (or ceiling) and then insert the four expansion bolts into the holes. Fix these bolts.

**Step 3**

Line up the four screw holes at the bottom of the pendant bracket to the four installation holes you just dug in the wall (or ceiling). Insert the four screws into the four holes of the bracket (at the bottom). Finally you can secure the bracket in the wall (or ceiling).

**Step 4**

Connect the device video output port to the terminal devices such as the DVR, NVS and etc. Then connect the power cable to the device.

Now you have completed the device installation and cable connection.
You can use the terminal devices such as the DVR, NVS and etc to view the monitor video.

# 4 Menu

## 4.1 Main Menu

**Please note the functions listed below are for mini dome camera, enhanced mini dome, high resolution dome camera and the vandal proof dome camera only.**

Please refer to the following sheet for menu information.

| THE 1st MENU | | THE 2ND MENU | | | THE 1st MENU | | THE 2ND MENU | |
|---|---|---|---|---|---|---|---|---|
| LENS | AUTO ↵ | TYPE | DC,VIDEO | | WD | ON↵ | LUMINANCE | LOW<br>MIDDLE<br>HIGH |
| | | MODE | AUTO.<br>ON,<br>OFF | | | | CONTRAST | LOW<br>MIDLOW<br>MID<br>MIDHIGH<br>HIGH |
| | | SPEED | 000-255 | | | | | |
| | MANUAL | | | | | OFF | | |
| SHUTTER<br>AGC | AUTO ↵ | HIGH LUMINANCE | | | MOTION DETECT | ON↵ | DETECT SENSE | 000-127 |
| | | MODE | SHUTTER+AUTO IRIS<br>AUTO IRIS<br>SHUTTER | | | | BLOCK DISPLAY | ON/OFF/SET↵ |
| | | BRIGHTNESS | 0-255 | | | | MONITOR AREA | ON<br>OFF |
| | | LOW LUMINANCE | | | | | AREA SEL | 1/4-1/4 |
| | | MODE | AUTO GAIN<br>OFF | | | | TOP | 000-288 |
| | | BRIGHTNESS | ×0.25~×1.00 | | | | BOTTOM | 000-288 |
| | MANUAL ↵ | MODE | SHUTTER+AGC | | | | LEFT | 000-468 |
| | | SHUTTER | 1/50~1/10,000 | | | | RIGHT | 000-468 |
| | | AGC | 6.00~44.80 | | | OFF | | |
| WHITE BALANCE | USER1 ↵ | B-GAIN | 0-255 | | PRIVACY MASK | ON ↵ | AREA SEL | 1/4~4/4 |
| | | R-GAIN | 0-255 | | | | TOP | 000~288 |
| | USER2 ↵ | B-GAIN | 0-255 | | | | BOTTOM | 000~288 |
| | | R-GAIN | 0-255 | | | | LEFT | 000~468 |
| | ANTI CR | | | | | | RIGHT | 000~468 |
| | PUSH LOCK | | | | | | COLOR | 1~8 |
| | MANUAL ↵ | LEVEL | 018-040 | | | | TRANSPARENT | 0.00~1.00 |
| | PUSH | | | | | | MOSAIC | ON<br>OFF |
| | ATW↵ | SPEED | 0-255 | | | OFF | | |
| | | DELAY CNT | 0-255 | | | | | |
| | | ATW FRAME | ×0.50~×2.00 | | DAY/NIGHT | AUTO ↵ | BURST | ON<br>OFF |
| | | ENVIRONMENT | INDOOR<br>OUTDOOR | | | | DELAY CNT | 000-255 |
| BACKLIGHT | OFF | | | | | | DAY→NIGHT | 000-255 |
| | BLC | | | | | | NIGHT→DAY | 000-255 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | HLC | | | | | B/W↵ | BURST | ON<br>OFF |
| PICT ADJUST | | MIRROR | ON,OFF | | | COLOR | | |
| | | BRIGHTNESS | 0-255 | | NR | ↵ | NR MODE | OFF，Y/C，Y，C |
| | | CONTRAST | 0-255 | | | | Y LEVEL | 000-015 |
| | | SHARPNESS | 0-255 | | | | C LEVEL | 000-015 |
| | | GAIN | 0-255 | | | ON↵ | | |
| SYNC | INT | | | | CAMERA ID | OFF | | |
| LANGUAGE | ENGLISH | | | | | | | |
| CAMERA RESET | | | | | | | | |

## 4.2 Main Interface

Press the menu button for 2 seconds; you can see the OSD menu appear in the monitor.

| MENU | |
|---|---|
| LENS | AUTO↵ |
| SHUTTER/AGC | AUTO↵ |
| WHITE BALANCE | ATW↵ |
| BACKLIGHT | OFF |
| PICT ADJUST | ↵ |
| ATR | OFF |
| MOTION DETECT | OFF |
| NEXT↵ | |
| EXIT↵ | SAVE ALL |

| MENU | |
|---|---|
| PRIVACY MASK | OFF |
| DAY/NIGHT | AUTO↵ |
| NR | ↵ |
| CAMERA ID | OFF |
| SYNC | INT |
| LANGUAGE | ENGLISH |
| CAMERA RESET | |
| BACK↵ | |
| EXIT↵ | SAVE ALL |

## 4.3 Detailed Operation

Use the up/down button to move the cursor to the 1ST MENU, Use the left/right button to set the corresponding parameter. You can click the confirm button to go to the sub-menu if current parameter checked with↵. Select the BACK ↵ to go back to previous menu.

### 4.3.1 LENS

| AUTO IRIS | |
|---|---|
| TYPE | DC |
| MODE | AUTO |
| SPEED | 080 |
| RETURN | |

**Auto** ↵

- Mode: The parameter includes DC/VIDEO.

✧ The DC is the DC auto iris and the VIDEO is video drive lens.

✧ Please connect to the auto iris port when you select the auto iris lens.

- Mode: It includes auto/on/off.
- Speed: Click the left/right button to set the value. The value ranges from 0 to 255.

**Manual**

It is the manual iris lens.

**Important:**

The different cameras support various lens type, please refer to the specifications sheet for detailed information.

### 4.3.2 SHUTTER GAIN

The parameter includes: auto↵, manual↵.

**AUTO** ↵

| | |
|---|---|
| AUTO SETUP | |
| HIGH LUMINANCE | |
| MODE | SHUTTER+AUTO IRIS |
| BRIGHTNESS | 028 |
| LOW LUMINANCE | |
| MODE | AGC |
| BRIGHTNESS | ×1.00 |
| RETURN | |

- High luminance/low luminance: It is the high brightness/low brightness.
- Mode: The high luminance parameter includes shutter+auto iris, auto iris, and shutter. The low luminance parameter includes auto gain control (AGC), off.
- Brightness: The high luminance parameter ranges from 0 to 255. Please use the left/right button to set. The low luminance parameter includes ×0.25,×0.50,×0.75,×1.00.

**Manual** ↵

| | |
|---|---|
| MANUAL SETUP | |
| MODE | SHUTTER+AGC |
| SHUTTER | 1/50 |
| AGC | 6.00 |
| RETURN | |

- Shutter: The parameter includes 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10,000.
- Auto gain: The parameter includes 6.00, 12.00, 18.00, 24.00, 30.00, 36.00, 42.00, and 44.80.

### 4.3.3 WHITE BALANCE (WB)

The parameter includes: manual↵, anti cr, push lock, user1↵, user2↵, ATW↵.

**Manual** ↵

| | |
|---|---|
| MANUAL WB | |
| LEVEL UP | ↵ |
| LEVEL DOWN | ↵ |
| PRESET | |
| RETURN | |

**User1**

| USER1 WB | |
|---|---|
| B-GAIN | 030 |
| R-GAIN | 033 |

- B-gain: It is to adjust the blue gain. Please use the left/right button to set. The value ranges from 0 to 255.
- R-gain: It is to adjust the red gain. Please use the left/right button to set. The value ranges from 0 to 255.

**Note**:

The user2 setup is the same with the user1.

**ATW**

| ATW | |
|---|---|
| SPEED | 239 |
| DELAY CNT | 003 |
| ATW FRAME | ×1.00 |
| ENVIRONMENT | INDOOR |
| RETURN | |

- ATW: It is the auto trace white balance. The camera can adjust the color temperature according to the actual color hue environments.
- Speed: The value ranges from 0 to 255. Please use the left/right button to set.
- Delay control: The value ranges from 0 to 255.Please use the left/right button to set.
- ATW frame: The parameter includes ×0.50、×1.00、×1.50、×2.00.
- Environment: The parameter includes: indoor, outdoor. Please use the left/right button to set.

**Push lock**

It is to click the OK button to lock the white balance.

**Anti-color roll (ANTI CR)**

Click it to enable the color roll control function.

### 4.3.4 HLC/BLC

The backlight compensation parameter includes: OFF, BLC, HLC.

- BLC: This function allows you to see the vivid video in the backlight environment.
- HLC: This function allows you to see the vivid video in the highlight environment.

### 4.3.5 PICTURE ADJUST

Click the confirm button to go to the sub-menu.

| PICT ADJUST | |
|---|---|
| MIRROR | OFF |
| BRIGHTNESS | 000 |
| CONTRAST | 128 |
| SHARPNESS | 128 |
| HUE | 128 |
| GAIN | 128 |
| RETURN | |

- Mirror: It is to set the horizontal mirror. The parameter includes on, off.
- Brightness: The value ranges from 0 to 255. Please use the left/right button to set.

- Contrast: The value ranges from 0 to 255. Please use the left/right button to set.
- Sharpness: The value ranges from 0 to 255. Please use the left/right button to set.
- Hue: The value ranges from 0 to 255. Please use the left/right button to set.
- Gain: The value ranges from 0 to 255. Please use the left/right button to set. (**Note: It is the color gain.** )

### 4.3.6 DIGITAL WDR/ATR/ATR-EX

The parameter includes on, off↵.

Select the on button and then click the confirm button to go to the sub-menu.

| | |
|---|---|
| ATR | |
| LUMINANCE | MID |
| CONTRAST | MID |
| RETURN | |

- Luminance: The parameter includes: low, middle, high.
- Contrast: The parameter includes: low, middle low, middle, middle high, high.

### 4.3.7 MOTION DETECT

The parameter includes: on/off↵.

Select the on button and then click the confirm button, you can go to the sub-menu.

| | |
|---|---|
| MOTION DETECT | |
| DETECT SENSE | 111 |
| BLOCK DISP | OFF |
| DETECT AREA | |
| MONITOR AREA ↵ | ON |
| AREA SEL | 1/4 |
| TOP | 000 |
| BOTTOM | 000 |
| LEFT | 000 |
| RIGHT | 000 |
| RETURN | |

- Detect sensitivity: The value ranges from 000 to 127. Please use the left/right button to set.
- Block: display: The parameter includes on, off, set↵. Click the set button; you can use the direction buttons to set the area to display the block.
- Monitor area: The parameter includes on, off.
- Area selection: The value ranges from 1/4 to 4/4. Please use the left/right button to set. System max supports 4 areas. You can use the up/down/left/right button to set.
- Top: The value ranges from 000 to 288. Please use the left/right button to set.
- Button: The value ranges from 000 to 288. Please use the left/right button to set.
- Left: The value ranges from 000 to 468. Please use the left/right button to set.
- Right: The value ranges from 000 to 468. Please use the left/right button to set.

### 4.3.8 PRIVACY MASK

The parameter includes on, off↵.

Select the on button and then click the confirm button, you can go to the sub-menu.

| PRIVACY | |
|---|---|
| AREA SEL | 1/4 |
| MODE | ON |
| POSITION | ↵ |
| COLOR | RED |
| TRANP | 0.05 |
| MOSAIC | OFF |
| RETURN | |

- Area selection: The value ranges from 1/4 to 4/4. Please use the left/right button to set. System max supports 4 areas. You can use the up/down/left/right button to set.
- Top: The value ranges from 000 to 288. Please use the left/right button to set.
- Bottom: The value ranges from 000 to 288. Please use the left/right button to set.
- Left: The value ranges from 000 to 468. Please use the left/right button to set.
- Right: The value ranges from 000 to 468. Please use the left/right button to set.
- Color: The value ranges from 1 to 8. Please use the left/right button to set.
- Transparent: The parameter includes: 0.00, 0.50, 0.75, and 1.00.
- Mosaic: The parameter includes on, off.

### 4.3.9 DAY/NIGHT

The parameter includes: auto↵, color, black and white↵.

**Auto** ↵

| DAY/NIGHT MODE | |
|---|---|
| BURST | ON |
| DEALY CNT | 003 |
| DAY→NIGHT | 001 |
| NIGHT→DAY | 007 |
| RETURN | |

- Burst: The parameter includes on, off.
- Delay control: The value ranges from 000 to 255. Please use the left/right button to set.
- Day-night: It is to set the minimum parameter to switch from the day mode to the night mode. The value ranges from 000 to 255. Please use the left/right button to set.
- Night-day: It is to set the maximum parameter to switch from the night mode to the day mode. The value ranges from 000 to 255. Please use the left/right button to set.

**Note:**

In day-night mode, the smaller the value, and the hard for the camera to switch to the black and white mode. In night-day mode, the larger the value, and the hard for the camera to switch to the color. Here we recommend the default value. If the system switches back and forth when you are using, please set the value in night-day mode larger and the value in the day-night mode smaller.

**Black and white** ↵

| B/W | |
|---|---|
| BURST | OFF |
| RETURN | |

- Burst: The parameter includes on, off.

### 4.3.10 NR (NOISE REDUCE/DE-NOISE)

Click the confirm button to go to the sub-menu.

Select the on button and then click the confirm button, you can go to the sub-menu.

| | |
|---|---|
| NR | |
| NR MODE | Y/C |
| Y LEVEL | 004 |
| C LEVEL | 004 |
| RETURN | |

- NR mode: The parameter includes off, Y/C, Y, C,
- Y level: The value ranges from 000 to 015. Please use the left/right button to set.
- C level: The value ranges from 000 to 015. Please use the left/right button to set.

### 4.3.11 CAMERA ID

The parameter includes on, off.

Select the on button and then click the confirm button, you can go to the sub-menu. Please use the direction buttons to select the character or the function and then click the confirm button to select.

CAMERA ID

0001

A B C D E F G H I J K L M N O P Q R S T U V
W X Y Z 0 1 2 3 4 5 6 7 8 9 — ! ” # $ % & ’
（） _ ‘ , ￥ : ; < = >?@ \ ^*. × ＋ ／

CHR1 CHR2

←→↑↓ CLR POS ↵

RETURN

Use the up/down button to move the cursor to the mark position and then click the confirm button to set the mark position. Please use the left/right button to select the characters and then click the confirm button to select.

CHR1: Library 1.

CHR2: Library 2.

←→↑↓: Select the character you want to modify.

CLR: Clear current character.

POS ↵: Select it to go to the camera mask position interface.

Mark setup

After you go to the camera ID setup interface, use the direction buttons “←→↑↓” to select the initial character of the mark code “0”. Use the direction buttons to select the CHR1 and then use the direction buttons to select character “1”. Click the confirm button to change the initial character “0” as “1” You can repeat the above steps to modify the following three-digit code. Select the character and then click the ‘CLR’, click the confirm button to remove the specified character. Please change the initial mark code “1” as “0”. Now you have completed the camera ID mark code. Use the direction buttons to select “POS ↵” and then click the confirm button, you can go to the position setup interface. Please click the direction buttons to set the camera ID overlay position on the screen. Click the confirm button to exit.

### 4.3.12 SYNC MODE

The system supports INT setup.

### 4.3.13 LANGUAGE

The parameter includes: English, Japanese and etc. The default setup is English.

### 4.3.14 CAMERA RESET

Please select the reset item and then click the confirm button to restore the factory default setup.

### 4.3.15 OTHERS

Next: Click it to go to the sub-menu.

Back: click it to return to the previous menu.

Return: click it to exit the menu setup interface.

SAVE ALL: Click it to save current setup.

**Important**

After you completed the setup, please click the “SAVE ALL” button to save current setup and then exit the menu. It is to guarantee the camera setup after the power failure.

## 4.4 Menu Keys Operation

Please refer to the following figure to operate the keys to set the OSD menu. See Figure 4-1. Here you can see the camera menu keys. Press the key in the middle for 2 seconds, you can call the menu. And then you can click the up/down button to move the cursor and then use the left/right button to select the item.

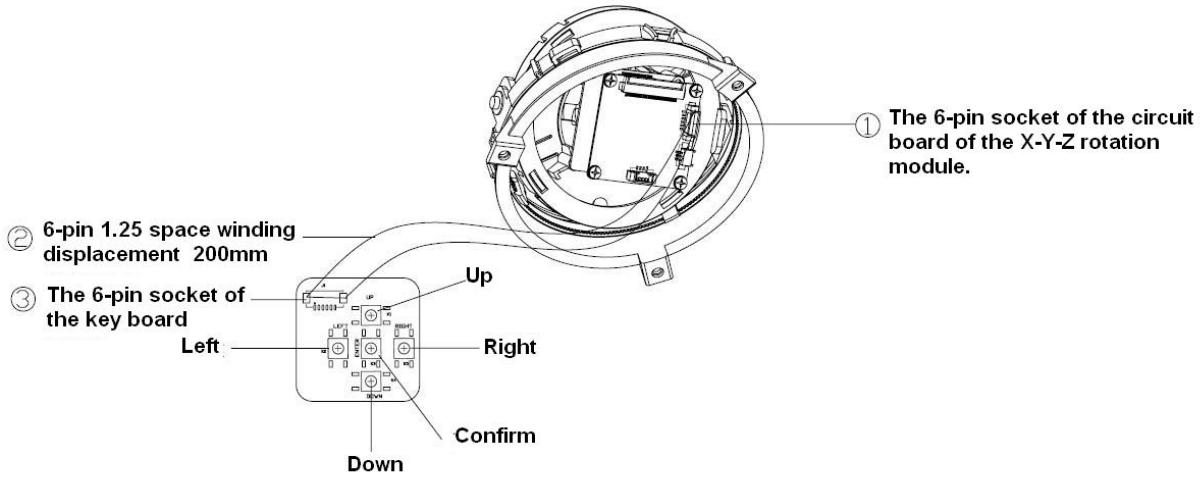
① The 6-pin socket of the circuit board of the X-Y-Z rotation module.
② 6-pin 1.25 space winding displacement 200mm
③ The 6-pin socket of the key board
Up
Left
Right
Confirm
Down

Figure 4-1

# Appendix Toxic or Hazardous Materials or Elements

| Component Name | Toxic or Hazardous Materials or Elements | | | | | |
|---|---|---|---|---|---|---|
| | Pb | Hg | Cd | Cr VI | PBB | PBDE |
| Circuit Board Component | ○ | ○ | ○ | ○ | ○ | ○ |
| Device Construction Material | ○ | ○ | ○ | ○ | ○ | ○ |
| Wire and Cable | ○ | ○ | ○ | ○ | ○ | ○ |
| Packing Components | ○ | ○ | ○ | ○ | ○ | ○ |
| Accessories | ○ | ○ | ○ | ○ | ○ | ○ |

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes

**Note**

- **This manual is for reference only. Slight difference may be found in the user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website or contact your local service engineer for more information.**